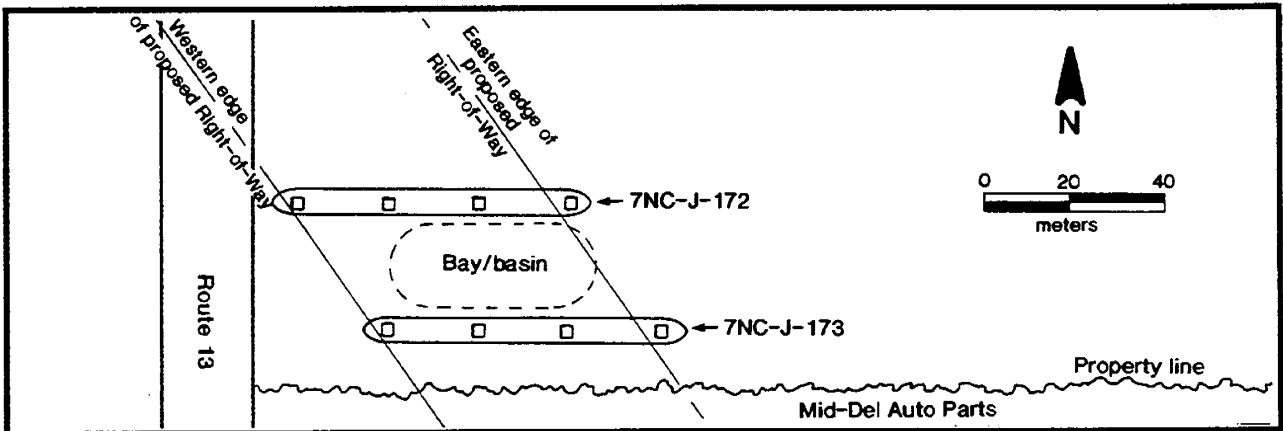


FIGURE 10

Site 7NC-J-172 and 7NC-J-173 – Site Limits and Location of all Phase II Tests



with plain water and placed in bags labeled with the site number and a three digit provenience number. Artifacts were sorted in categories for cataloging based on their raw material and morphological composition. Artifact inventories for each site are provided in Appendix I.

Because lithic resource availability and organization of lithic technologies are associated with patterns of social organization and adaptation, it is important to know how such resources were utilized during times of prehistoric occupation. One means of determining lithic resource procurement strategies and utilization is by conducting an attribute test on debitage recovered from archaeological sites designed to indicate whether that debitage originated from prepared cores or bifaces (Appendix II). An attribute test was conducted for this purpose on randomly selected samples of debitage from six of the sites in the project area which date to Woodland occupations (7NC-J-134, 7K-C-359, 7K-C-363, 7K-C-364, 7K-C-367, and 7K-D-22).

PHASE II RESULTS

Phase II testing of archaeological sites along the State Route 1 Relief Route was intended to (1) evaluate the integrity of the sites, (2) locate any prehistoric subsurface features, (3) determine the culture complexes present, (4) assess the significance of cultural resources located by the prior surveys, (5) define the limits of the sites, and (6) determine whether the sites were eligible for listing on the National Register of Historic Places.

7NC-J-172

7NC-J-172 is located within the proposed State Route 1 Relief Route right-of-way east of Route 13 and south of N.C. Road 485 (Figure 2). The site is situated in an agricultural field on a ten-foot slope of Sassafras sandy loam soil on the north rim of a bay/basin feature (Figure 10). The entire site has been plowed. One meter by one meter units were excavated in the area of highest artifact density as determined by Phase I testing. The limits of the site and the location of all Phase II test units are shown in Figure 10.

Phase I Summary

Phase I testing consisted of a pedestrian survey which identified a square-stemmed projectile point, a unifacial flake tool, and two fire-cracked rocks. Because of the presence of the point, diagnostic of the Woodland I period, and artifacts known to be associated with particular types of activities in prehistory, and because of the site's location adjacent to a bay/basin, it was determined that Phase II testing was warranted (Bachman et al. 1988).

Phase II Results

Phase II testing of 7NC-J-172 consisted of four 1m x 1m test units (Figure 10). No cultural features were identified by the Phase II testing and only one prehistoric artifact, a quartz flake, was recovered.

Conclusions and Recommendations

Since no significant cultural resources were identified by Phase II testing, this site is not considered to be eligible for listing on the National Register of Historic Places. No further work is recommended.

7NC-J-173

7NC-J-173 is located within the proposed right-of-way east of Route 13 and south of N.C. Road 485 (Figure 2). The site is situated in an agricultural field on a 10-foot slope of Sassafras sandy loam soil on the south rim of a bay/basin feature. The entire site has been plowed.

Phase I Summary

Phase I testing consisted of a pedestrian survey which located a single chert core. Because the core indicates cultural activity and because its presence in association with a bay/basin holds potential for locating additional cultural materials, it was determined that Phase II testing was warranted (Bachman et al. 1988). The limits of the site and the location of all Phase II test units are shown in Figure 10.

Phase II Results

Phase II testing of 7NC-J-173 consisted of four 1m x 1m test units. No cultural features or prehistoric artifacts were located by the Phase II testing. The limits of the site and the location of all Phase II test units are shown in Figure 10.

Conclusions and Recommendations

Because no prehistoric cultural resources were located by Phase II sampling, this site is not considered to be eligible for listing on the National Register of Historic Places. No further work is recommended.

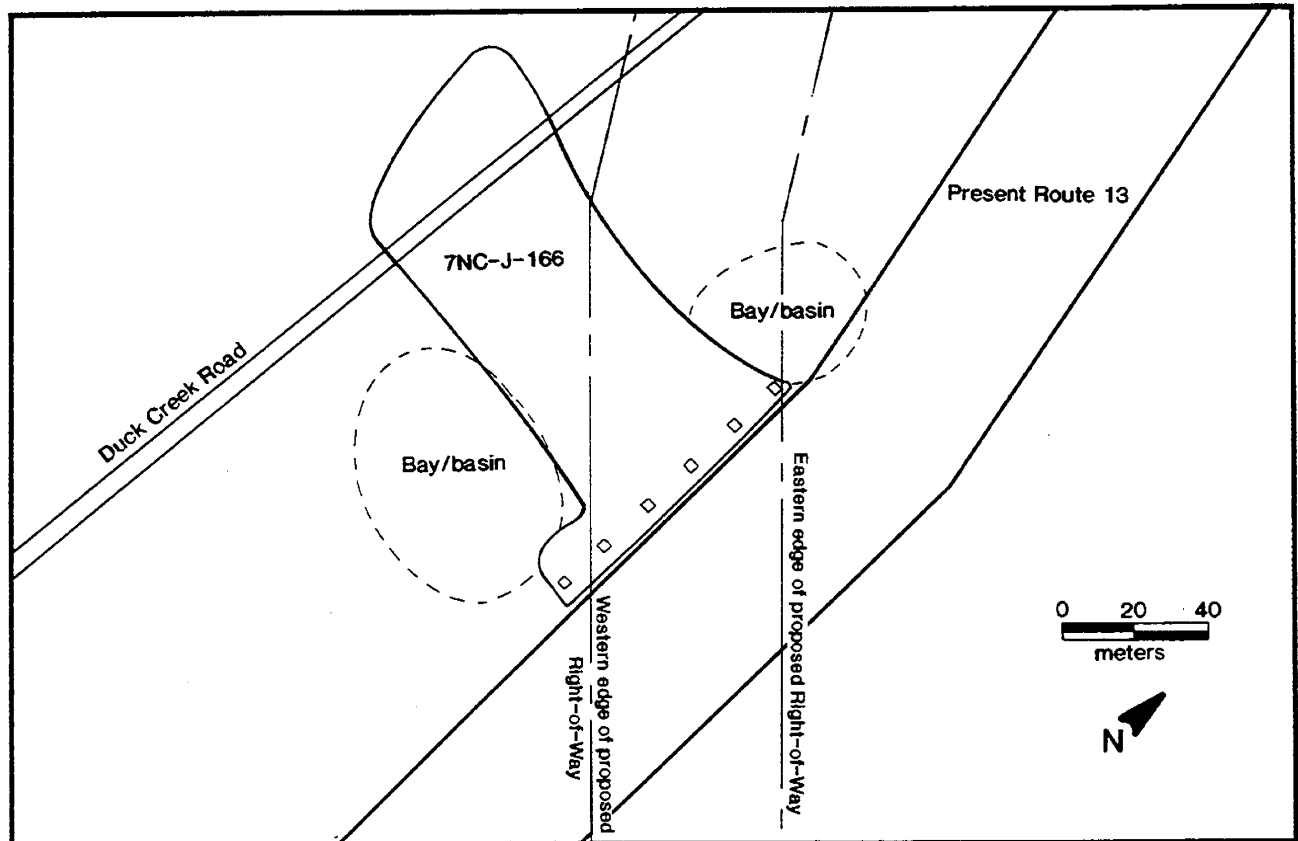
7NC-J-166

7NC-J-166 is located in two adjoining agricultural fields within and adjacent to the proposed right-of-way to the east, and west of Duck Creek Road and south of the N.C. Road 485 crossing (Figure 2). The site is situated on a 10-foot rise of sandy loam between bay/basin features to the north and southwest and a channelized drainage to the southwest. The eastern portion of the site is situated around the rims of two adjacent dry bay/basins. The entire site has been plowed. The limits of the site and the location of all Phase II test units are shown in Figure 11.

Phase I Summary

Phase I testing consisted of a pedestrian survey which identified a thin artifact scatter in an area measuring 400 feet by 800 feet. This scatter included a Woodland I stemmed point, two non-diagnostic biface fragments, two unifacial flake tools, and a variety of cores, flakes, and fire-cracked rocks. Because the setting in the vicinity of bay/basins and a stream is conducive to a variety of cultural activities known to have been practiced by prehistoric populations and because the variety of artifacts recovered indicates further potential for better site definition, it was determined that Phase II testing was warranted (Bachman et al. 1988).

FIGURE 11
Site 7NC-J-166 –
Site Limits and Location of all Phase II Tests



Phase II Results

Phase II testing of 7NC-J-166 consisted of six 1m x 1m test units (Figure 11). No prehistoric features were located by Phase II testing, and only one diagnostic artifact, a jasper bifurcated projectile point associated with the Archaic Period, was recovered from the plow zone. The remainder of artifacts consists of one chert flake, two quartz flakes, and six jasper flakes located on the surface and in the plow zone. The presence of a projectile point and the site's location in the vicinity of bay/basins and minor and major drainages indicate that the site may have functioned as a procurement locus with an ephemeral occupation or occupations. The plow zone context of the artifacts, however, does not provide sufficient control to enable a more definitive determination.

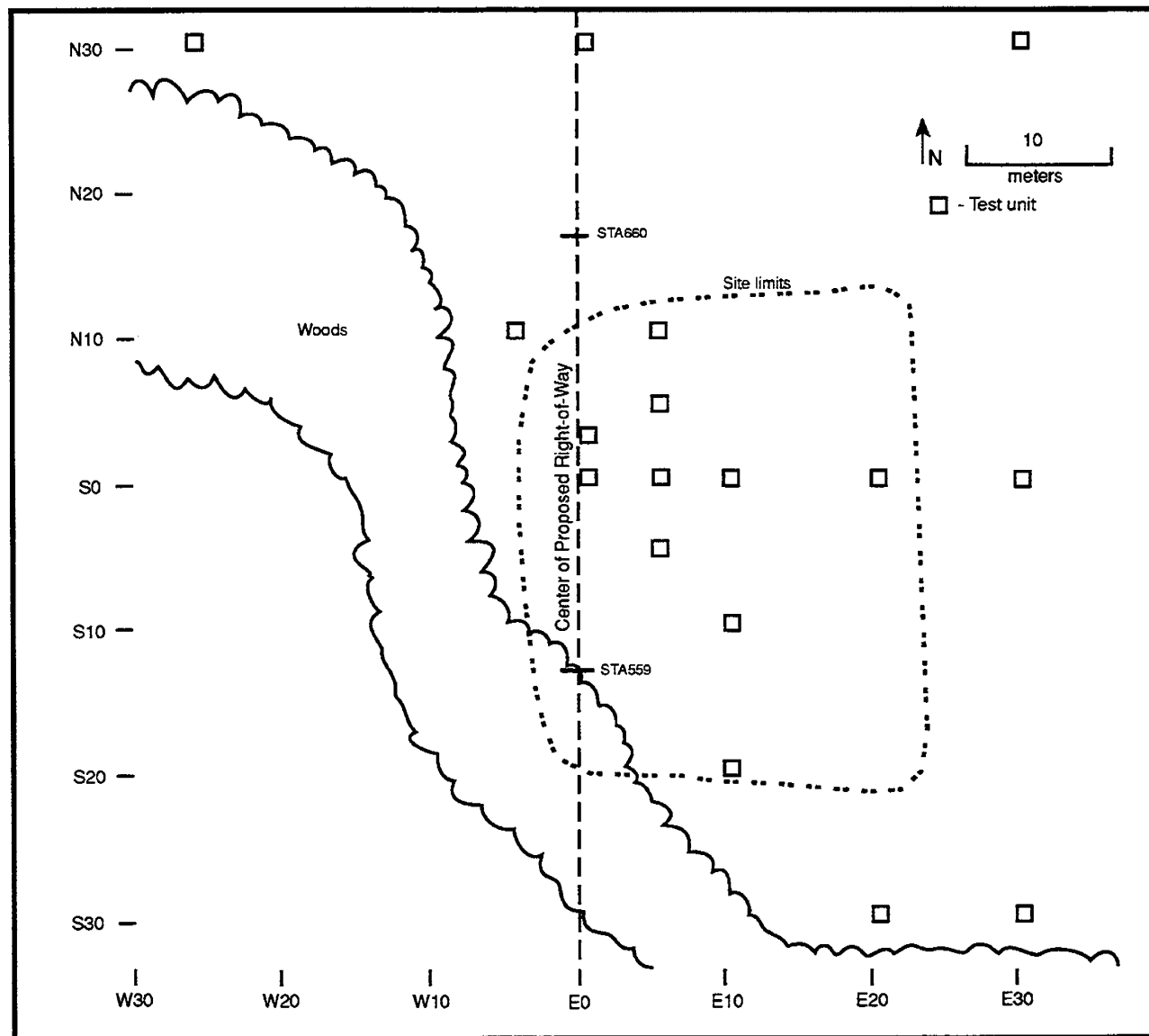
Conclusions and Recommendations

No prehistoric subsurface features were located by Phase II testing of 7NC-J-166 and the full extent of the limited artifact assemblage was confined to the plow zone. Therefore, the site is not considered to be eligible for listing on the National Register of Historic Places and no further work is recommended.

7NC-J-171

7NC-J-171 is located within the proposed right-of-way north of Smyrna and Duck Creek on the south side of N.C. Road 30 (Figure 2). The site is situated on a ten foot rise and is located in an agricultural field south and west of a channelized stream. Soils at the site consist of Sassafras sandy loam, and the entire site has been plowed.

FIGURE 12
Site 7NC-J-171 –
Site Limits and Location of all Phase II Tests



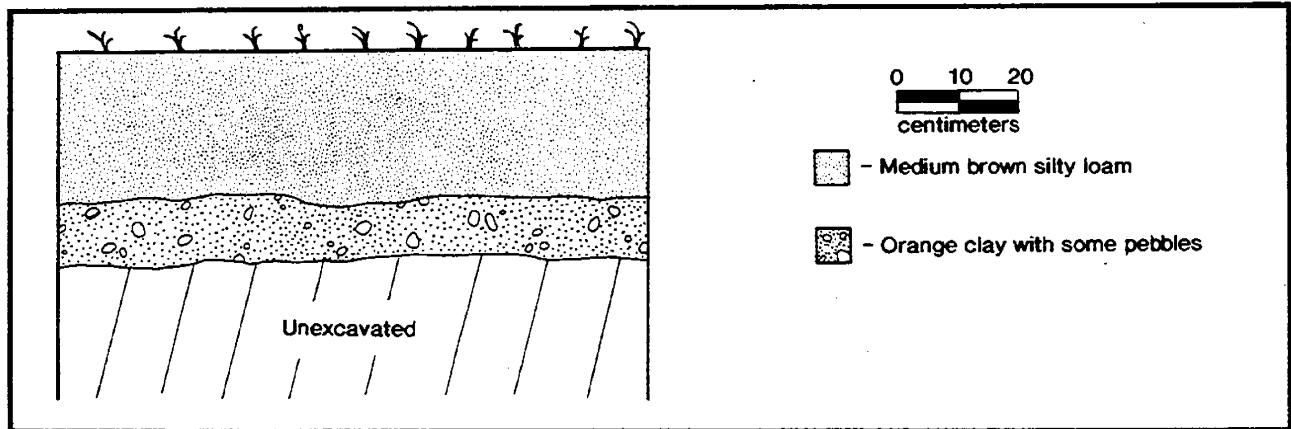
Phase II tests were excavated in all directions around the area of highest artifact density as determined by Phase I testing. The limits of the site and the location of all Phase II test units appear in Figure 12.

Phase I Summary

Phase I testing consisted of a pedestrian survey which located a single contracting stemmed black chert biface found on a gentle slope at the head of an ephemeral stream to the channelized stream. Because Phase I testing produced an artifact with diagnostic potential and because its location on a rise in the vicinity of a low-order drainage would likely have been conducive to cultural activity in all periods of prehistory, it was determined that Phase II testing was warranted (Bachman et al. 1988).

FIGURE 13

Site 7NC-J-171 – Representative Soil Profile from the North Wall of Test Unit 6



Phase II Results

Phase II testing of 7NC-J-171 consisted of 17 1m x 1m test units excavated near Phase I tests that recovered cultural material. Soil stains appeared in two of the test units but were determined to be tree root disturbances. A typical soil profile taken from Test Unit 6 is illustrated in Figure 13. The plow zone extended to a depth of approximately 26 cm and consisted of medium-brown silty loam soils underlain by orange clay Pleistocene deposits of the Columbia Formation. No cultural features or prehistoric artifacts were located in any of the test units. The limits of the site and the location of all Phase II excavations are shown in Figure 12.

Conclusions and Recommendations

No cultural features or prehistoric artifacts were located during Phase II testing. Since no cultural resources were identified, the site is not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended.

7NC-J-134

7NC-J-134 is located within the proposed right-of-way north of Smyrna (Figure 2). The site is situated on a gradual 10-foot slope in an agricultural field at the edge of a tidal marsh. Soils at the site consist of sandy loam soils of the Sassafras series (Matthews and Lavoie 1970). The entire site has been plowed. Phase II tests were excavated in all directions around the area of highest artifact density as determined by Phase I testing until artifact density fell below two prehistoric artifacts per shovel test. The limits of the site and the location of all Phase II test units in relation to the proposed right-of-way appear in Figure 14.

Phase I Summary

Phase I testing at 7NC-J-134 consisted of a pedestrian survey. Despite poor visibility, two flakes and several fire-cracked rocks were recovered from a surface area measuring 75 feet by 250 feet. Because the artifact scatter was evident even under poor conditions and because the site was situated on a soil type favorable to prehistoric occupation (Sassafras sandy loam) adjacent to a drainage, it was determined that Phase II testing was warranted (Bachman et al. 1988).

FIGURE 14

Site 7NC-J-134 – Site Limits and Location of all Phase II Tests Showing Concentration of Total Prehistoric Artifacts

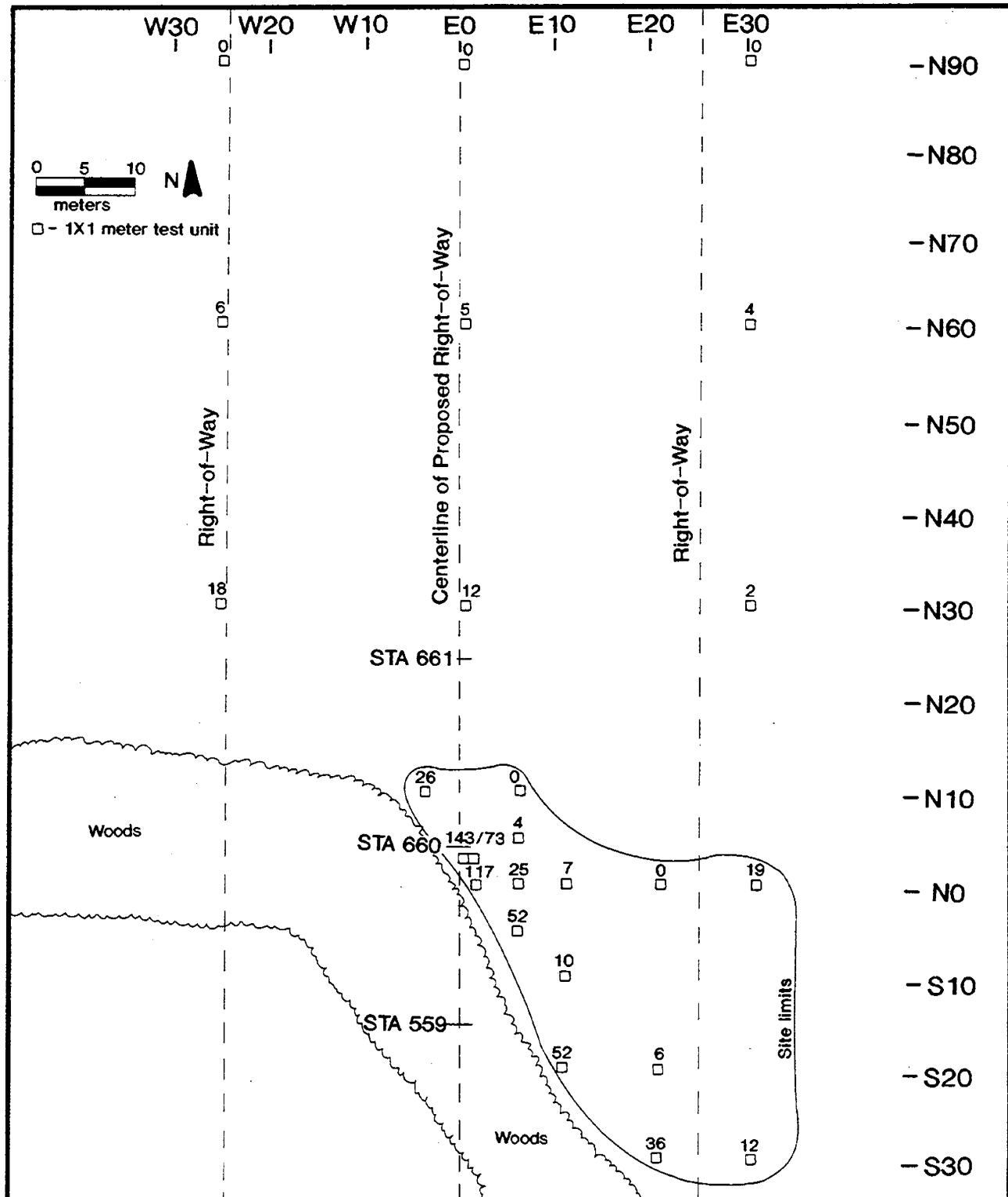
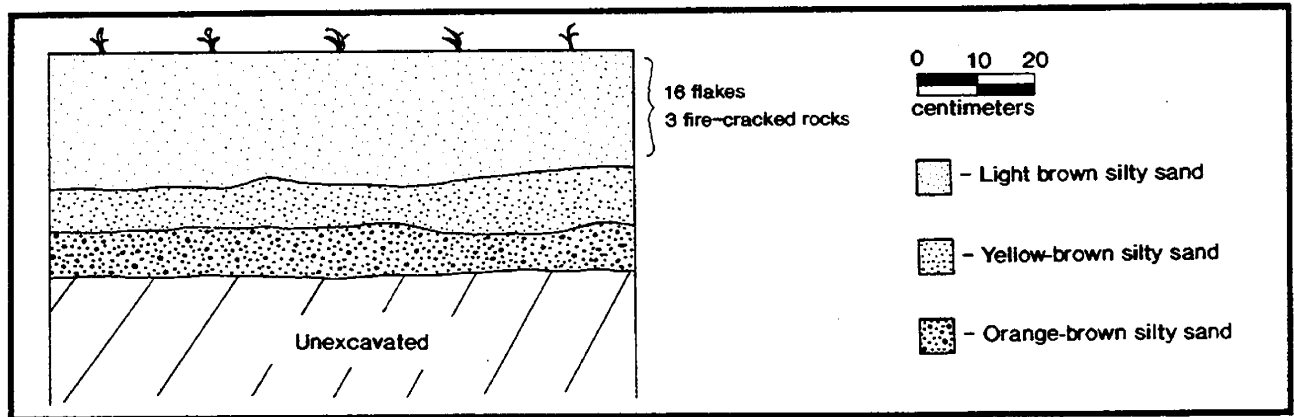


FIGURE 15

Site 7NC-J-134 – Representative Soil Profile from the South Wall of Test Unit NOE30



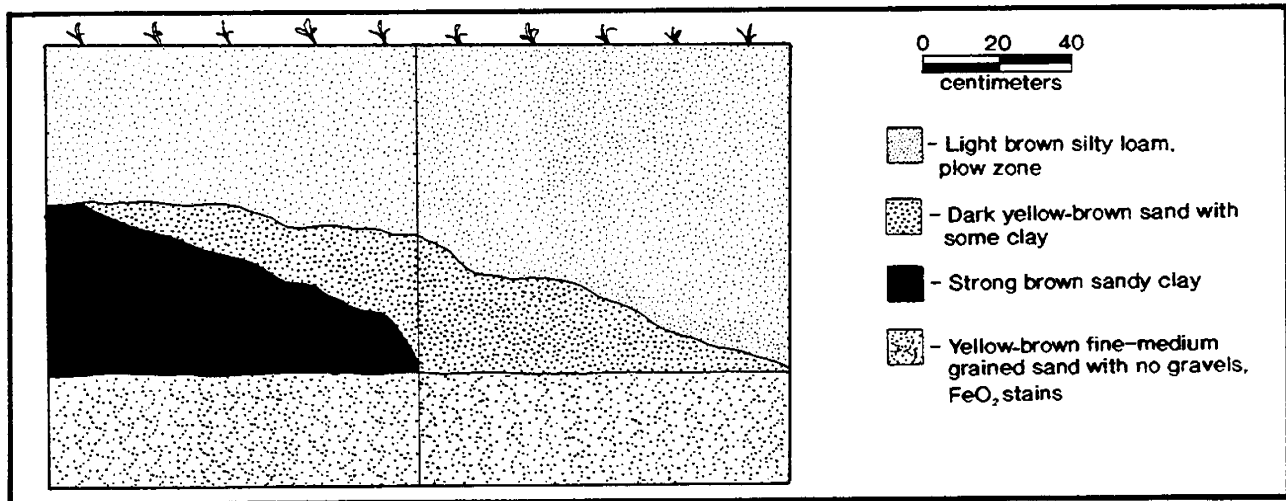
Phase II Results

Phase II testing of 7NC-J-134 consisted of 25 1m x 1m test units. The limits of the site and the location of all Phase II test units are shown in Figure 14. No features were located in the Phase II testing and the site appeared to be largely confined to a 60m x 55m area extending north from the S30 line to N10 and east from the W5 line to E30 (Figure 14).

Figure 15 shows a typical profile of the site taken from the south wall of Test Unit NOE30. This profile shows a plow zone extending down approximately 23 cm below surface consisting of light brown silty sand soils. Underlying the plow zone was a shallow layer of yellow-brown silty sand soils of Holocene deposition extending down to approximately 30 cm below ground surface. Beneath this horizon, the subsoil consisted of orange-brown silty sands of Pleistocene deposition. Test units excavated north of the site limits along N60 and N90 exhibited similar profiles but contained pebbles and gravels throughout the profiles, indicating that the site has suffered some serious erosion. Several units along the western edge of the site had much deeper buried plow zones, in some cases extending down as far as 90 cm below ground surface (Figure 16). Three of these units (N3E0, N3E1, and N0E1) produced 53 percent of the total artifacts found at the site in levels as deep as 80 cm below ground surface. It is difficult to define these concentrations as discrete areas of activity such as would be expected at a base camp since several other areas of the site contained similar artifacts in lower quantities. No subsurface features were located by Phase II testing, and the majority of artifacts from the site (86%) were located in the plow zone, including diagnostic artifacts from the Archaic through the Woodland II periods. In fact, one unit alone (S5E5) contained diagnostic artifacts spanning this range. Therefore, it is evident that the site has been disturbed by both erosional and cultural processes.

This disturbed condition of the stratigraphy makes it difficult to discriminate particular occupations of the site. Diagnostic artifacts located by Phase II testing include projectile points associated with both the Archaic and Woodland I periods (Figure 17), one Coulbourn ceramic sherd associated with the Delmarva Adena Complex of the Woodland I Period, three Townsend ceramics associated with the Slaughter Creek Complex of the Woodland II Period (Figure 17), and two small Minguannan ceramic sherds associated with the Minguannan Complex of the Woodland II Period. Table 2 shows a summary catalog of all the artifacts located at the site. All of the diagnostic artifacts were recovered from the plow zone. Thus, the most that can be said about the age of the occupations of the site is that it was occupied sometime during the Archaic (ca. 6500 B.C. - 3000 B.C.), the Woodland I (ca. 3000 B.C. - A.D. 1000), and the Woodland II (ca. A.D. 1000 - 1600) time periods.

FIGURE 16
Site 7NC-J-134 -
Test Units N3E1 and N3E0, South Wall Profile



The remaining artifact assemblage from the site is dominated by lithic debitage, the greatest number of which consist of jasper (270), followed by quartz (103), quartzite (91), chert (49), chalcedony (23), rhyolite (14), and argillite (1) (Table 2). The percentage of cortex is higher for the cryptocrystalline materials such as chert and jasper (37% each) and for quartz (33%), somewhat lower for quartzite (24%), and lowest for chalcedony (9%). The presence of imported materials such as rhyolite and argillite suggests the possibility of trade networks or long-distance lithic procurement quests. Finally, fire-cracked rock was located in small pockets across the site. The quantity of flakes (551), flake tools (4), projectile points (9) (Figure 17), early stage biface rejects (4), cores (4), and shatter (8) makes it apparent that tool manufacture and possibly tool refurbishing were intensive activities at the site.

The projectile points from the site show a variety of use wear and damage patterns. Two side-notched Woodland I points (Figures 17D and 17E) show transverse fractures typical of knife usage. Extensive resharpening is present along the lateral edges and tip of the Woodland I notched point shown in Figure 17B and this point was probably a discard which could not be resharpened any further. The stemmed point shown in Figure 17G shows similar use and discard patterns. The stemmed and notched points shown in Figures 17A, C, H, and I were all manufactured from thick flakes which were not successfully thinned through bifacial reduction and represent manufacturing rejects. Thus, the projectile point assemblage shows evidence of tool kit refurbishing activities with both discards and rejects present.

Flake attribute analysis conducted on a sample of debitage from 7NC-J-134 indicates that a mixed technology of biface and core reduction was practiced at the site. A greater number of bifaces are represented in the assemblage from the site, but cores are also present. In addition, there is a significant representation of cortex among the debitage (32%). Overall, there seems to have been a somewhat higher utilization of bifaces from prepared tool kits at the site, with perhaps a more modest utilization of prepared cores, and significant supplementary reliance on local cobbles. Table 3 shows the distribution of the attributes for the sample of 60 cryptocrystalline flakes from this site. The attribute test at 7NC-J-134 produced the following results. In terms of flake type, the overall trend was toward complete flakes, which is an indicator of core reduction; however, there is also a strong representation of broken flakes, which control studies suggest are more prominent in debitage from bifacial reduction (Custer and Lowery 1990) (Appendix II). As previously mentioned, the sample from 7NC-J-134 shows a greater absence than presence of cortex at the site as would be expected from late stage biface reduction, but there is also a notable presence of cortex, which could indicate cobble core utilization on an expedient basis.

FIGURE 17

Site 7NC-J-134 – Projectile Points and Ceramic

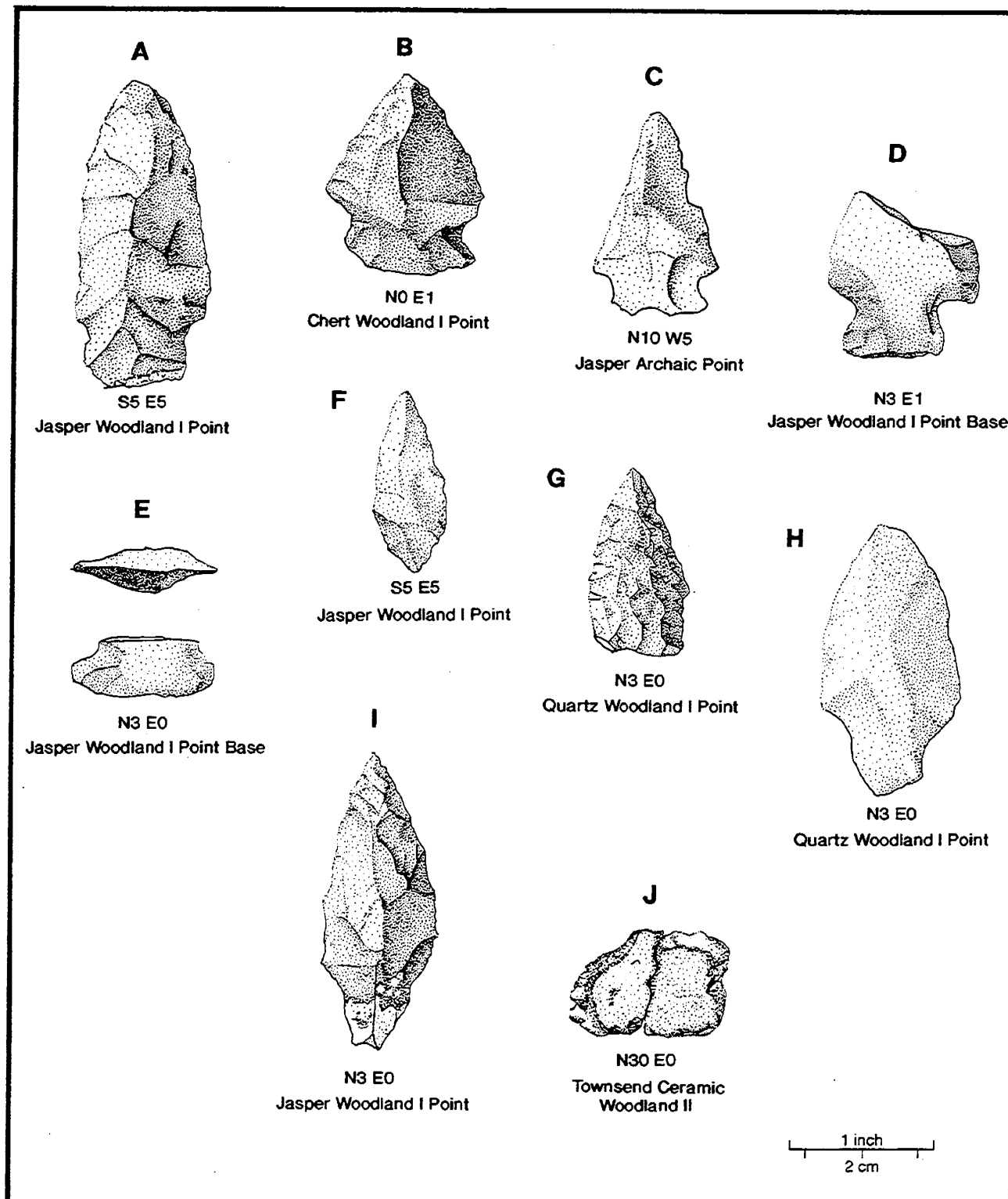


TABLE 2

SITE 7NC-J-134 PREHISTORIC ARTIFACT SUMMARY

	Qtzte.	Qtz.	Chert	Jas.	Rhy.	Arg.	Chal.	Total
Flakes	91(22)	103(34)	49(18)	270(100)	14	1	23(2)	551(176)
Flake Tools	---	2(2)	---	2(2)	---	---	---	4(4)
Archaic Points	---	---	1	4(1)	---	---	---	5(1)
Woodland I Points	---	2	---	2	---	---	---	4
ESBR	1	1	---	1	---	---	1	4
LSBR	---	---	---	1	---	---	---	1
Other Bifaces	---	---	1	---	---	---	1	2
Shatter	---	8(1)	---	---	---	---	---	8(1)
Cores	1	1(1)	---	2(2)	---	---	---	4(3)
Total	93(22)	117(38)	51(18)	282(105)	14	1	25(2)	583(185)

Total Count %

Quartzite	93(22)	16.00
Quartz	117(38)	20.05
Chert	51(18)	8.70
Jasper	282(105)	48.35
Rhyolite	14	2.40
Argillite	1	.20
Chalcedony	25(2)	4.30
Total		100.00

KEY:

Qtzte. - Quartzite
Qtz. - Quartz

Rhy. - Rhyolite
Arg. - Argillite

ESBR - Early Stage Biface Reject
LSBR - Late Stage Biface Reject

TABLE 3

SITE 7NC-J-134 DEBITAGE ATTRIBUTE FREQUENCIES

Flake Type		Platform Shape	
Complete	27	Triangular	12
Proximal	8	Flat	9
Medial	6	Round	13
Distal	19		
Cortex		Remnant Biface Edge	
Present	18	Present	2
Absent	42	Absent	58
Size (cm)		Platform Preparation	
<2	41	Present	4
>2, <5	19	Absent	30
>5	0		
Size (mm)		Scar Count	
<10	1	Mean	= 2.60
>10, <15	14	Std. Dev.	= 1.38
>15, <20	26		
>20, <25	11		
>25, <30	5		
>30, <35	1	Directions Count	
>35, <40	1	Mean	= 1.80
>40, <45	1	Std. Dev.	= .87
>45	0		

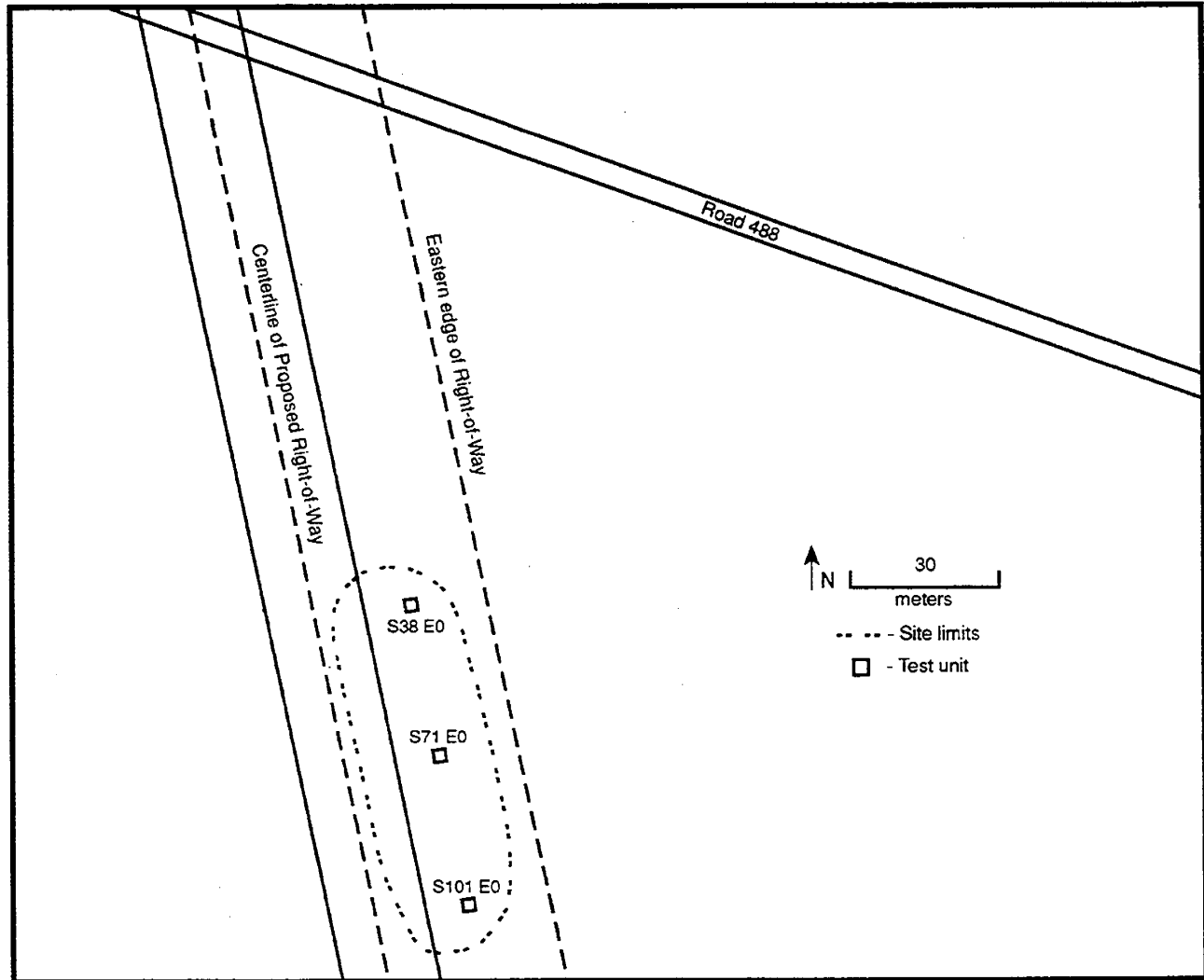
With regard to flake size, the overwhelming majority of flakes at this site are small, an attribute more commonly associated with biface reduction. The data on number and complexity of flake scars fails to enable a distinction between biface and core utilization. In terms of platform shape, there are slightly more round platforms which can result from either early stage biface reduction or decortication. Next in prominence are triangular shaped platforms, which appear to be more common in bifacial reduction, and only slightly less prominent are flat platforms which Gunn and Mahula (1977) found to be more commonly derived from cores. Finally, in terms of remnant biface edge and platform preparation, which are associated with biface reduction, there is a very low incidence of both attributes in the sample from 7NC-J-134. In general, this site conforms to the trend toward mixed technology in tool kits prepared from primary materials, with a strong supplementary utilization of local secondary cobbles.

In sum, the lack of site integrity, the absence of subsurface features, and the plow zone context of the majority of artifacts, including all of the diagnostic types, precludes discrimination of particular occupations of the site and definition of site function. The quantity and breadth of artifact types at the site, however, including a variety of ceramics, indicates that the site may have functioned as a small transient base camp where cobble reduction and tool refurbishing took place by various groups throughout a long span of prehistory.

Conclusions and Recommendations

No cultural features were identified by Phase II archaeological testing. The site has been plowed and all artifacts were recovered from disturbed plow zone contexts. The site, therefore, is not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended.

FIGURE 18
Site 7NC-J-135 -
Site Limits and Location of all Phase II Tests



7NC-J-135

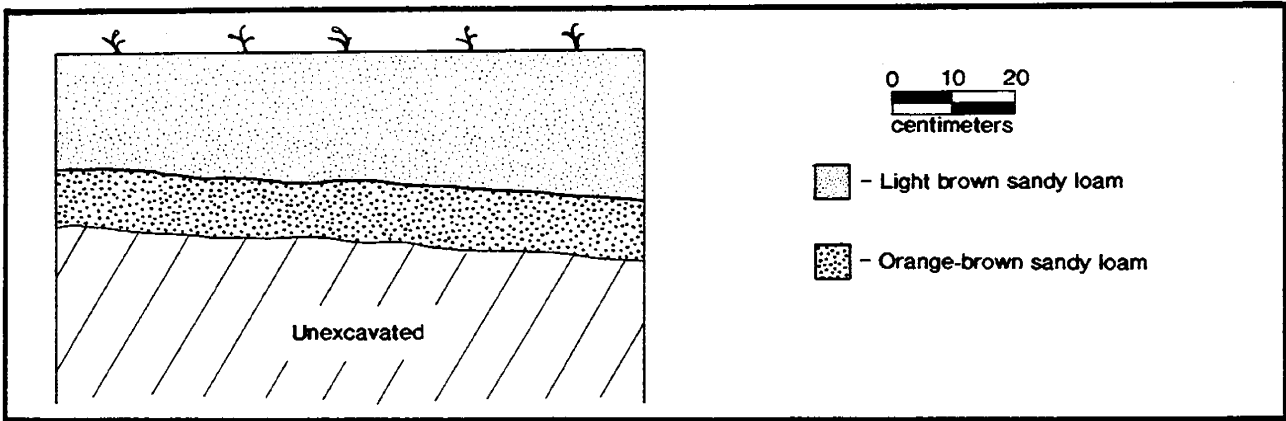
7NC-J-135 is located within the proposed right-of-way north of Smyrna and Duck Creek and south of the intersection of Route 13 and Road N.C. 488 (Figure 2). The site is situated on a 10-foot rise of Sassafras sandy loam in an agricultural field adjacent to a bay/basin and marshy terrain. Phase II tests were excavated in the area of highest artifact density as determined by Phase I testing. The entire site has been plowed. The limits of the site and the location of all Phase II test units appear in Figure 18.

Phase I Summary

Phase I testing consisted of a pedestrian survey. Although surface visibility was poor, two small artifact scatters, including flakes, fire-cracked rock, and one bifurcate fragment, were located. Because this site and two nearby sites produced artifact scatters and because of their location in an elevated area, adjacent to a bay/basin and in the vicinity of a drainage source, it was determined that Phase II testing was warranted (Bachman et al. 1988).

FIGURE 19

Site 7NC-J-135 – Representative Soil Profile from the North Wall of Test Unit S71E0



Phase II Results

Phase II testing of 7NC-J-135 consisted of three 1m x 1m test units placed across the crest of a rise in the landscape near the Phase I survey area that produced cultural material. The limits of the site and the location of all Phase II tests are shown in Figure 18. A typical soil profile taken from the north wall of Test Unit S71E0 shows a relatively thin plow zone extending down approximately 22 cm deep and underlain by orange-brown sterile subsoil (Figure 19). No prehistoric cultural features were located during Phase II testing and no prehistoric artifacts were recovered.

Conclusions and Recommendations

No cultural features or prehistoric artifacts were identified by Phase II archaeological testing. Furthermore, the site has been plowed and its integrity has been disturbed. The site, therefore, is not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended.

7K-A-97, 7K-A-98, AND 7K-A-99

7K-A-97, 7K-A-98, and 7K-A-99 are located in an area of the proposed right-of-way south of the Delaware Route 6 crossing in Smyrna (Figure 2). The limits of the sites and the location of all Phase II test units appear in Figure 20. These sites are situated in a no-till corn field of Sassafras sandy loam soils at the confluence of a small, ephemeral stream and Mill Creek. The entire area of the sites has been plowed.

Phase I Summary

Phase I testing consisted of a pedestrian survey and a series of shovel test pits. Shovel Test Pit 39-8 (7K-A-97), produced one chert flake from the plow zone. Shovel Test Pit 39-19 (7K-A-98), produced no cultural materials. Nearby Shovel Test Pits 30-26 and 30-27 (7K-A-99), produced one jasper flake from the plow zone. Although artifact density was low and no cultural materials were recovered from subsoil contexts, it was determined that the sites' location at a minor/major stream confluence warranted Phase II testing of each site as part of the Category 3 site sample (Bachman et al. 1988).

FIGURE 20

Sites 7K-A-97, 7K-A-98 and 7K-A-99 –
Site Limits and Location of all Phase II Tests

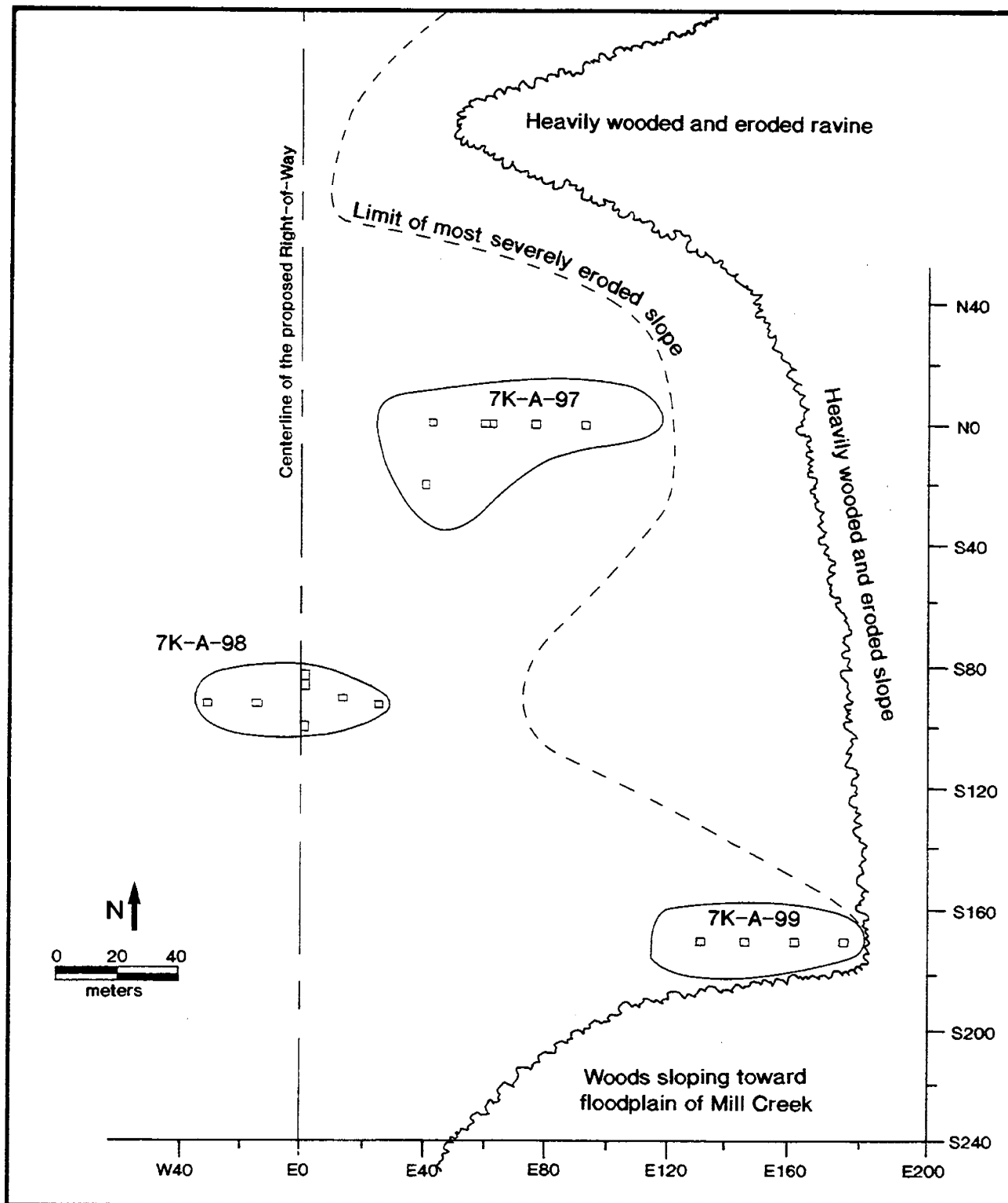
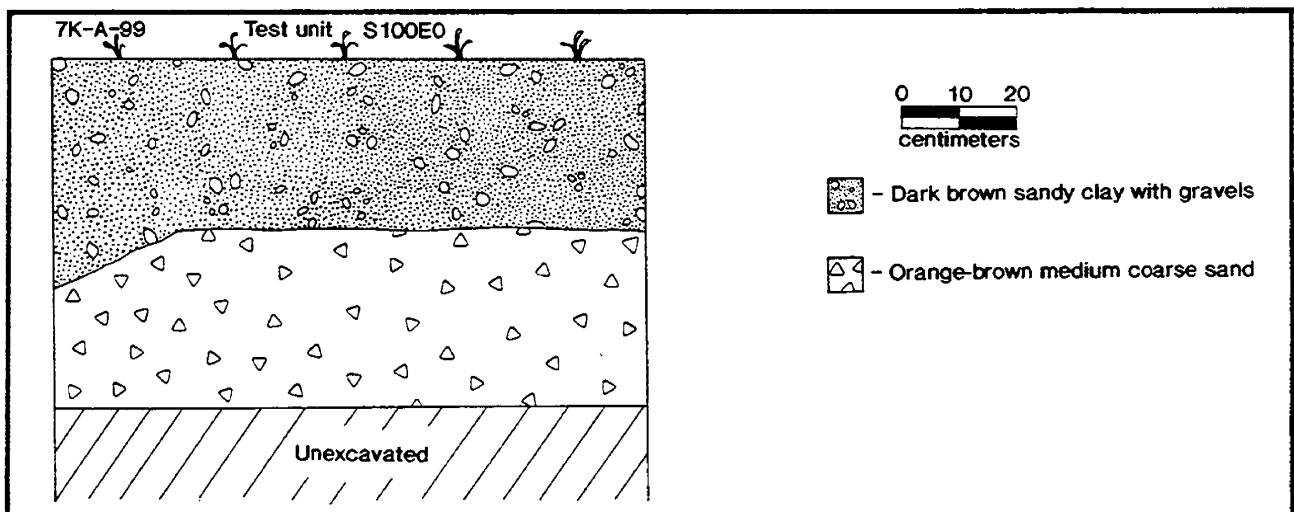
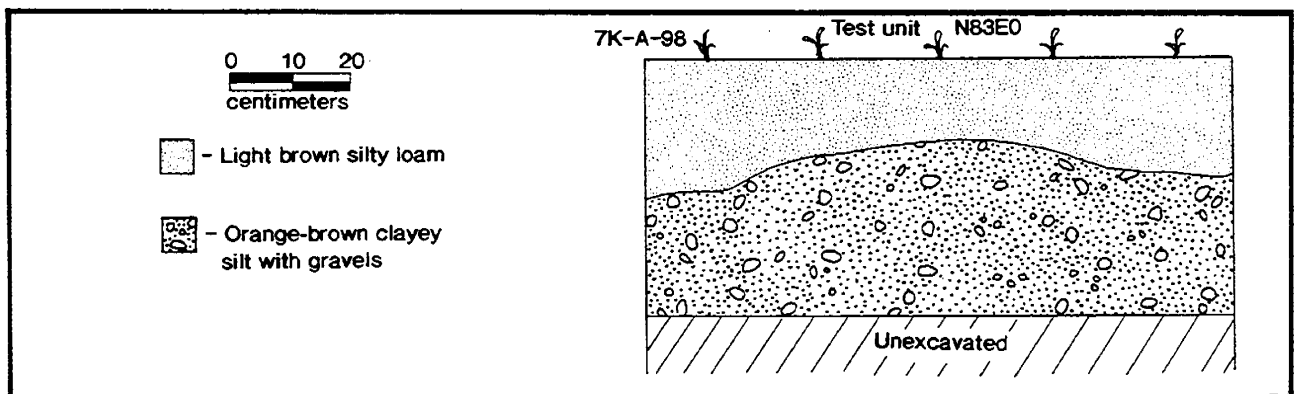
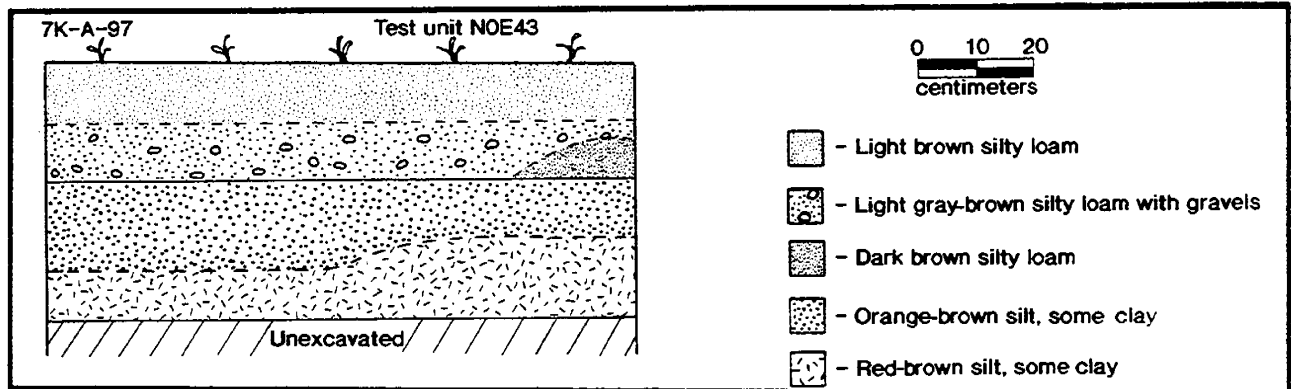


FIGURE 21
Sites 7K-A-97, 7K-A-98 and 7K-A-99 –
Representative Soil Profiles from the North Walls of Test
Units NOE43, N83E0 and S100E0 Respectively



Phase II Results

Phase II testing at these sites consisted of 17 1m x 1m test units excavated in areas where prehistoric artifacts were recovered in the Phase I survey. The limits of the sites and the location of all Phase II test units are shown in Figure 20. A representative profile from 7K-A-97 is shown in Figure 21. The profile shows a thin plow zone consisting of light-to-dark brown silty loam soils to a depth of approximately 20 cm below ground surface. Beneath the plow zone are orange-brown to red-brown silty soils with some clay present. Pleistocene gravels were observed in both the plow zone and subsoil levels, indicating that significant erosion had occurred at the site. Artifacts from the site included 10 jasper, 11 quartzite, one quartz, and two chert flakes, and one fire-cracked rock, all recovered from the plow zone. Only one flake showed any signs of cortex.

A representative profile from 7K-A-98 is also shown in Figure 21. The profile from this site also shows a thin plow zone of light brown silty loam soil to a depth of approximately 20 cm below ground surface. Beneath the plow zone are orange-brown clayey silty soils with Pleistocene gravels. Again, the thin plow zone above Pleistocene deposits suggests considerable erosion at the site. Artifacts identified in Phase II testing included six quartz and quartzite flakes, one chalcedony flake, five jasper and three chert flakes, one jasper utilized flake, one chalcedony core, one quartz core, five pieces of quartz shatter, two Mockley ceramic sherds, and one shell-tempered ceramic sherd. Three of the lithic artifacts and the two Mockley sherds were recovered from subsoil which extends to a depth of approximately 40 cm below ground surface. The remainder of artifacts were recovered from the plow zone. Only two flakes and the chalcedony core show signs of cortex.

A representative soil profile from 7K-A-99 is shown in Figure 21. This profile shows a deeper plow zone than the other two sites, extending down to approximately 30 cm below surface. Nevertheless, Pleistocene gravels were present in the plow zone, indicating that erosion had taken place at this location as well. Beneath the plow zone were orange-brown, medium-coarse sands. Artifacts identified in Phase II testing consisted of 28 quartz, 29 jasper, four chert, five chalcedony, one ironstone, and eight quartzite flakes, two jasper utilized flakes, two quartz utilized flakes, one chert core, one Marcey Creek ceramic sherd, three mica-tempered sherds, 18 Mockley ceramic sherds, five unidentifiable sherds, and eight fire-cracked rocks. Seventy-eight percent of the assemblage was located in the plow zone; the remainder came from Level 2 (30-40 cm below surface).

No cultural features were located in any of the sites. The only diagnostic artifacts from this group of sites dated to the Woodland I Period and consisted of one Marcey Creek ceramic sherd associated with the Clyde Farm/Barker's Landing complexes, and 20 Mockley sherds associated with the Carey Complex. Two of the Mockley ceramics came from Level 2 of 7K-A-98; the remainder of diagnostic sherds were located in the plow zone. It is evident that these sites on Mill Creek remained popular for a long span of the Woodland I Period, and seem to have been occupied ephemerally during that span. There is too little data to make any further inferences regarding the activities that may have taken place at these sites.

Conclusions and Recommendations

No cultural features were identified by the Phase II testing, and diagnostic artifacts from intact subsurface contexts are too sparse to enable definitive interpretations regarding the function of the sites in the Woodland I settlement pattern for central Delaware. Therefore, sites 7K-A-97, 7K-A-98, and 7K-A-99 are not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended for any of these sites.

SITES 7K-A-105, 7K-A-106, 7K-A-107, 7K-A-108, AND 7K-A-109

The Snow's Branch Complex (7K-A-105 through 7K-A-109) is located on Snow's Branch, a small tributary of the Leipsic River (Figures 2 and 22). The complex consists of five sites, 7K-A-105, 7K-A-106, 7K-A-107, 7K-A-108, and 7K-A-109, which are situated on low rises at the edge of two agricultural fields along the banks of Snow's Branch. The entire area of the sites has been plowed. The soils adjacent to Snow's Branch consist of well-drained Sassafras sandy loam and are moderately to severely eroded (Matthews and Lavoie 1970). In a wooded area adjacent to the site complex lie several small bay/basin features. Phase II tests were excavated in

FIGURE 22

Snow's Branch Site Complex (7K-A-105, 7K-A-106, 7K-A-107, 7K-A-108, 7K-A-109) - Site Locations

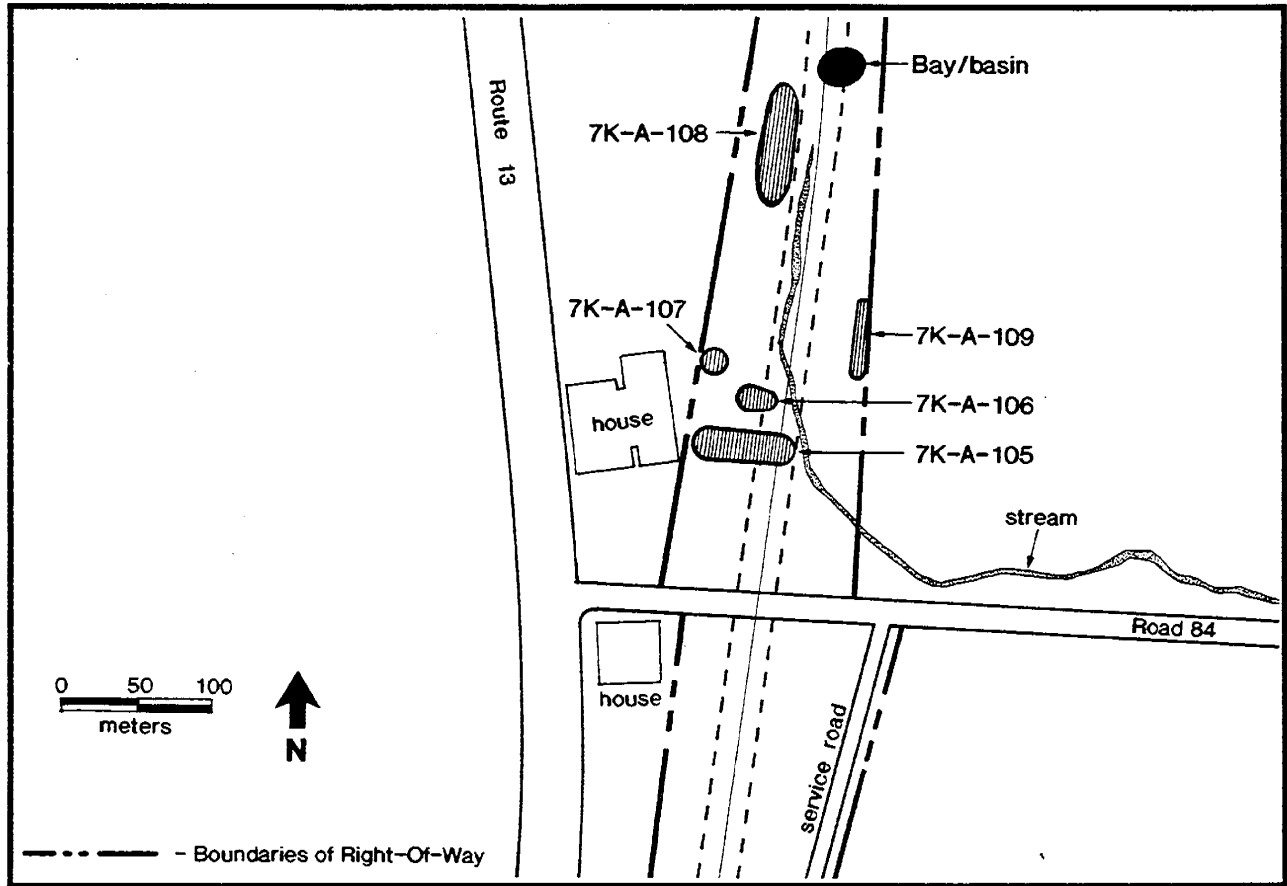


FIGURE 23

Site 7K-A-105 -
Site Limits and Location of all Phase II Tests

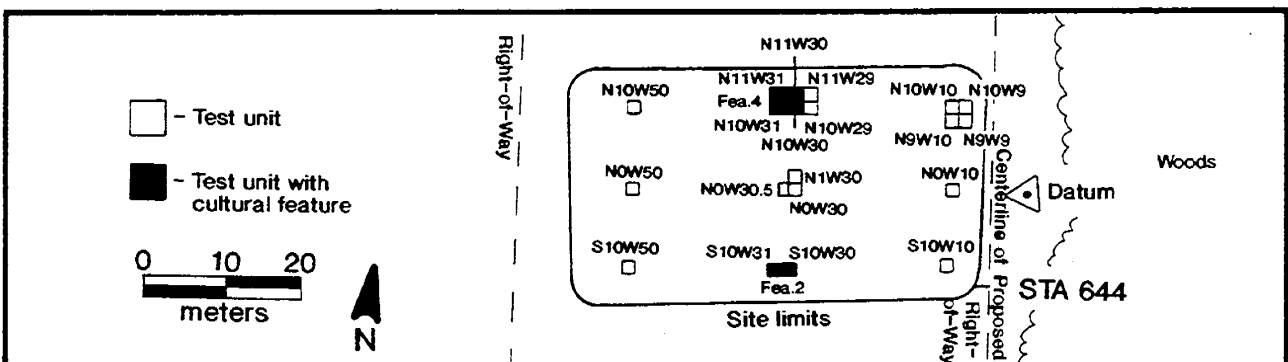


FIGURE 24

Site 7K-A-106 – Site limits and Location of all Phase II Tests Showing Total Prehistoric Artifact Concentrations

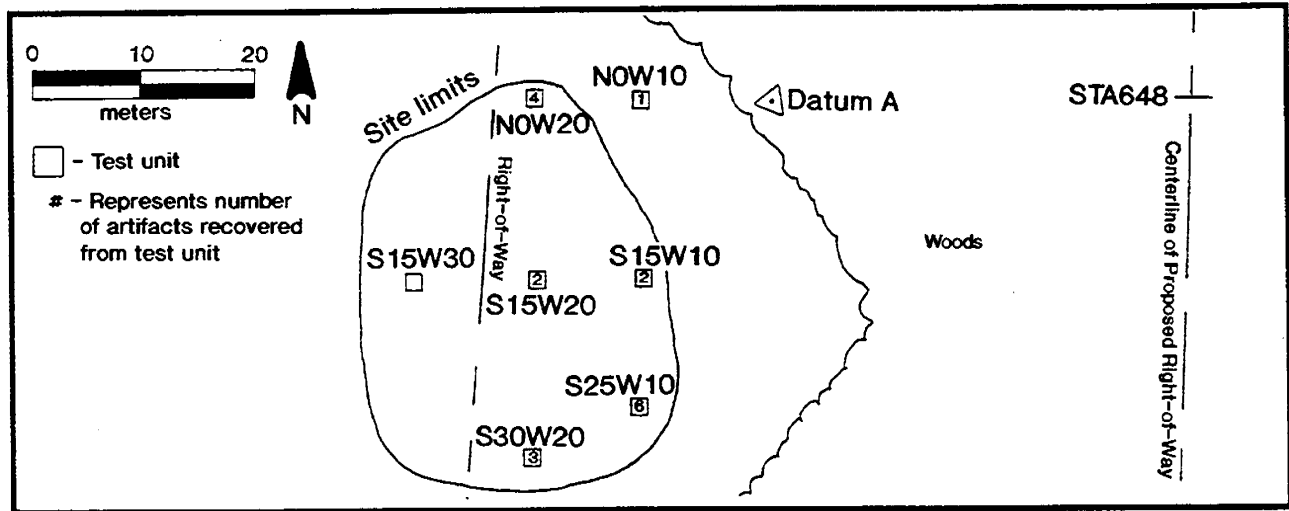
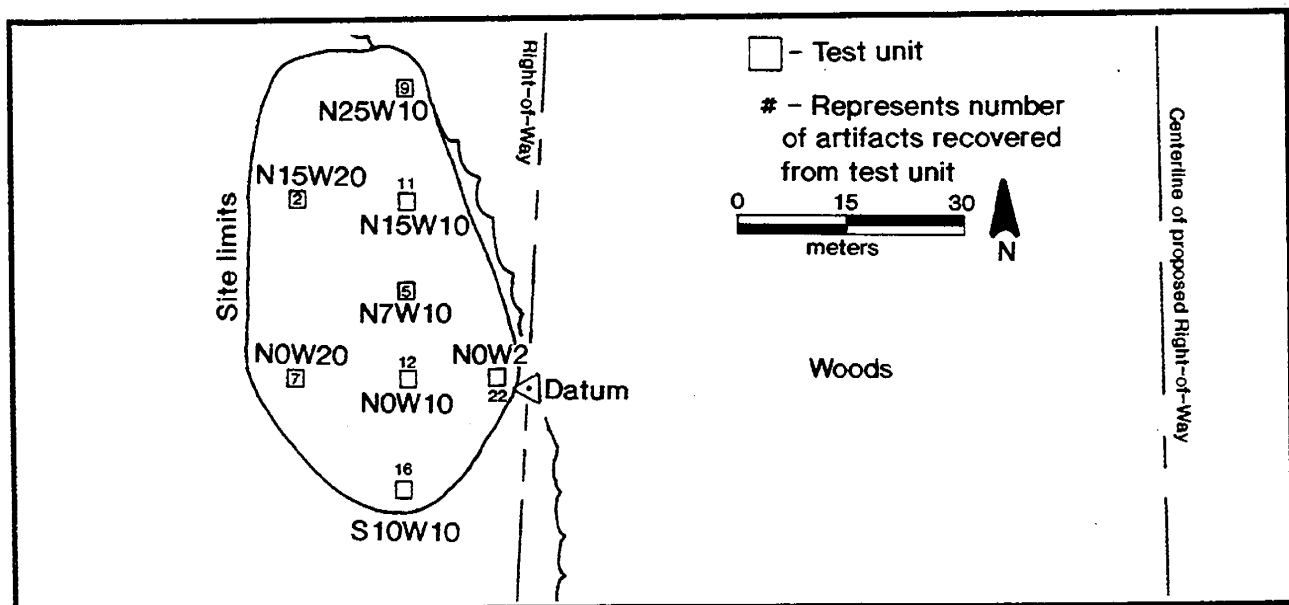


FIGURE 25

Site 7K-A-107 – Site Limits and Location of all Phase II Tests Showing Total Prehistoric Artifact Concentrations



all directions around the area of highest artifact density as determined by Phase I testing. The limits of the sites and the locations of all Phase II tests and features identified in relation to the proposed right-of-way appear in Figures 23-27.

Phase I Summary

Phase I testing consisted of a pedestrian survey along the western portion of the right-of-way and shovel testing in 40-foot intervals along the eastern portion. The pedestrian survey located four loci of prehistoric activity which produced two chert bifurcated base points diagnostic of the Archaic Period, one chert corner-notched point and one quartz corner-notched biface diagnostic of the Woodland I Period, 30 fire-cracked rock, and 19 flakes. Shovel testing located a fifth site on a low terrace on the eastern side of Snow's Branch and produced three flakes and one utilized flake. Because of the relatively high density and variety of artifacts and because of the sites' locations on a tributary to a major drainage in the vicinity of bay/basin features, it was determined that Phase II testing was warranted for each site (Bachman et al. 1988).

Phase II Results

The locations of the five sites within the Snow's Branch Complex (sites 7K-A-105, 7K-A-106, 7K-A-107, 7K-A-108, 7K-A-109) are shown in Figure 22. Each of the sites will be presented below in separate discussions. Phase II testing determined that all five sites in the Snow's Branch Complex had been disturbed to a depth of approximately 45 cm by chisel plowing. This deep plowing of the subsoil was recently undertaken by the present agricultural tenants of the property who operate a large tree nursery farm.

At 7K-A-105, Phase II testing consisted of nine 1m x 1m test units plus additional units necessary to expose features. The entire site was situated in a plowed field. The limits of 7K-A-105 and the locations of all Phase II test units and features are shown in Figure 23. Six features were identified. All of the features were found to be disturbed by chisel plowing. A typical non-feature soil profile from Test Unit N0W50 appears in Figure 28 and shows a plow zone extending to a depth of approximately 40 cm, including a mounded section in the uppermost strata that contained inclusions of yellow clayey sand subsoil. The plow zone/subsoil interface was thick in several units, indicating great disturbance across the site.

Chisel plowing evident in all of the Snow's Branch Complex sites left only small portions of Features 2 and 4 in 7K-A-105. These two features were located in Test Units S10W30 and N10W30 respectively (Figures 29 and 30). Both features appear to be the remains of large open pits. The feature soils were defined by slight concentrations of small charcoal flecks. Feature 2 was encountered approximately 50 cm below surface in Test Unit N10W30 and extended into the southeastern wall of Test Unit S10W31 which was then opened up to expose the shallow pit-like feature (Figure 29). Feature 4 was encountered approximately 57 cm below surface in Test Units N10W30 and N10W31 (Figure 30). Test Units N10W29 to the east and N11W29, N11W30, and N11W31 to the north were then opened up to expose the pit-like feature which extended down approximately 40 cm below plow zone (Figures 23 and 30). Feature 5, which probably originated from rodent disturbance, intruded into the southwestern edge of Feature 4 leaving the limits of that edge difficult to define. No identifiable artifact concentrations or diagnostic artifacts were recovered from either feature. No further analysis is possible because of the presence of chisel plow scars every six inches throughout the features and surrounding subsoil. Another cultural feature, Feature 6, a historic square post mold, intruded into Feature 4 in Test Unit N10W30. Three additional features, Features 1, 3, and 5, were determined to be both non-cultural and partially disturbed. No diagnostic artifacts were located in the Phase II testing of 7K-A-105.

A summary catalog of prehistoric artifacts recovered in Phase II excavations is shown in Table 4. Seventy percent of the total artifacts recovered from this site were located in the plow zone. Eighty-four percent of the artifacts are flakes, most of which are made of jasper and chert, and thirty-four percent of which exhibit cortex (Table 4). Other artifacts recovered in Phase II testing include one jasper flake tool, two pieces of quartz shatter, and eight fire-cracked rocks. Seventy-eight percent of the artifact assemblage was recovered from two areas of concentration which seem to represent the core of the occupation. The first area included Test Units N0W30, N0W30.5, and N1W30; the second included N10W29, N10W30, N10W31, N11W29, N11W30, and N11W31.

FIGURE 26

Site 7K-A-108 – Site Limits and Location of all Phase II Tests Showing Total Prehistoric Artifact Concentrations

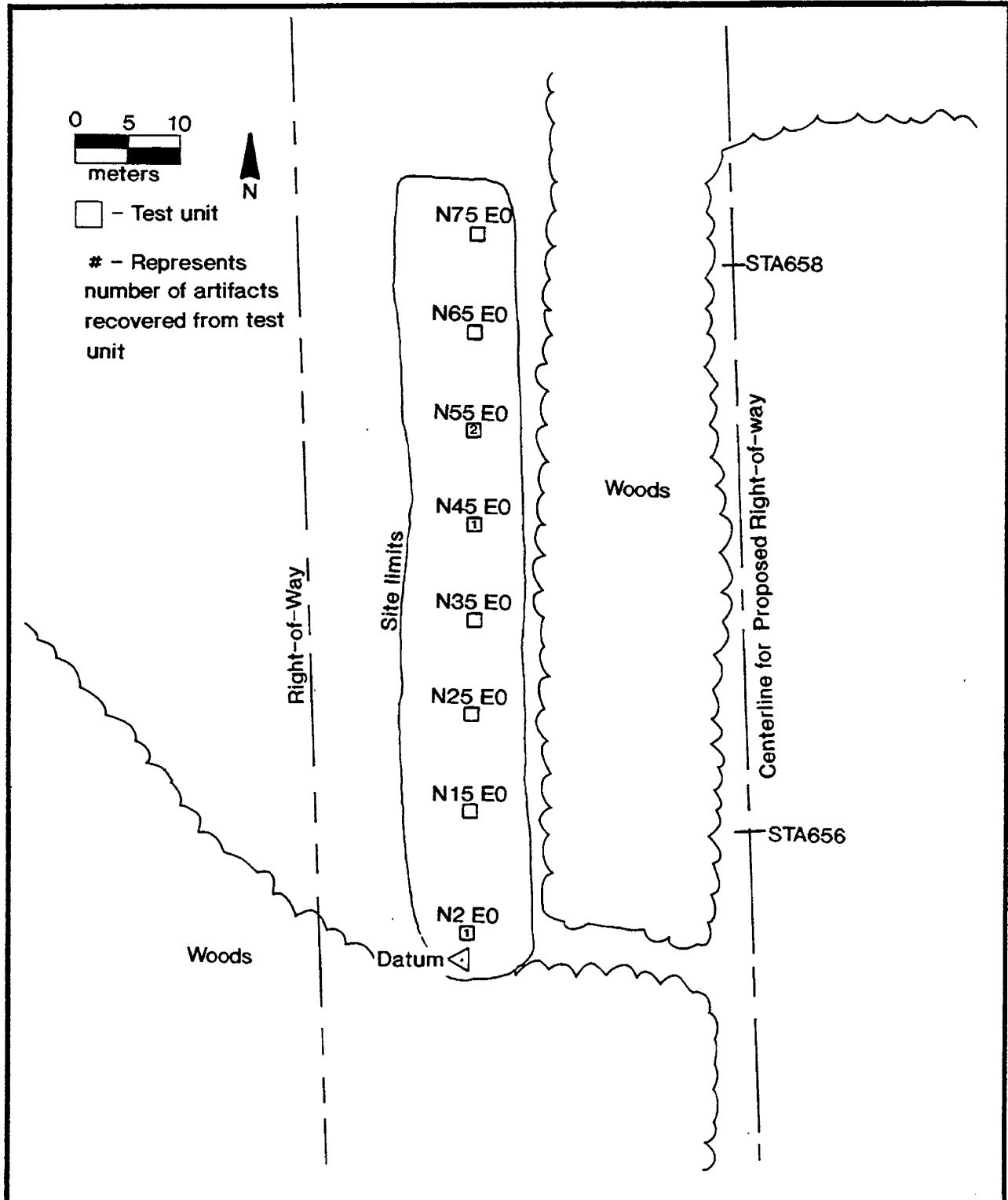


FIGURE 27

Site 7K-A-109 – Site Limits and Location of all Phase II Tests Showing Total Prehistoric Artifact Concentrations

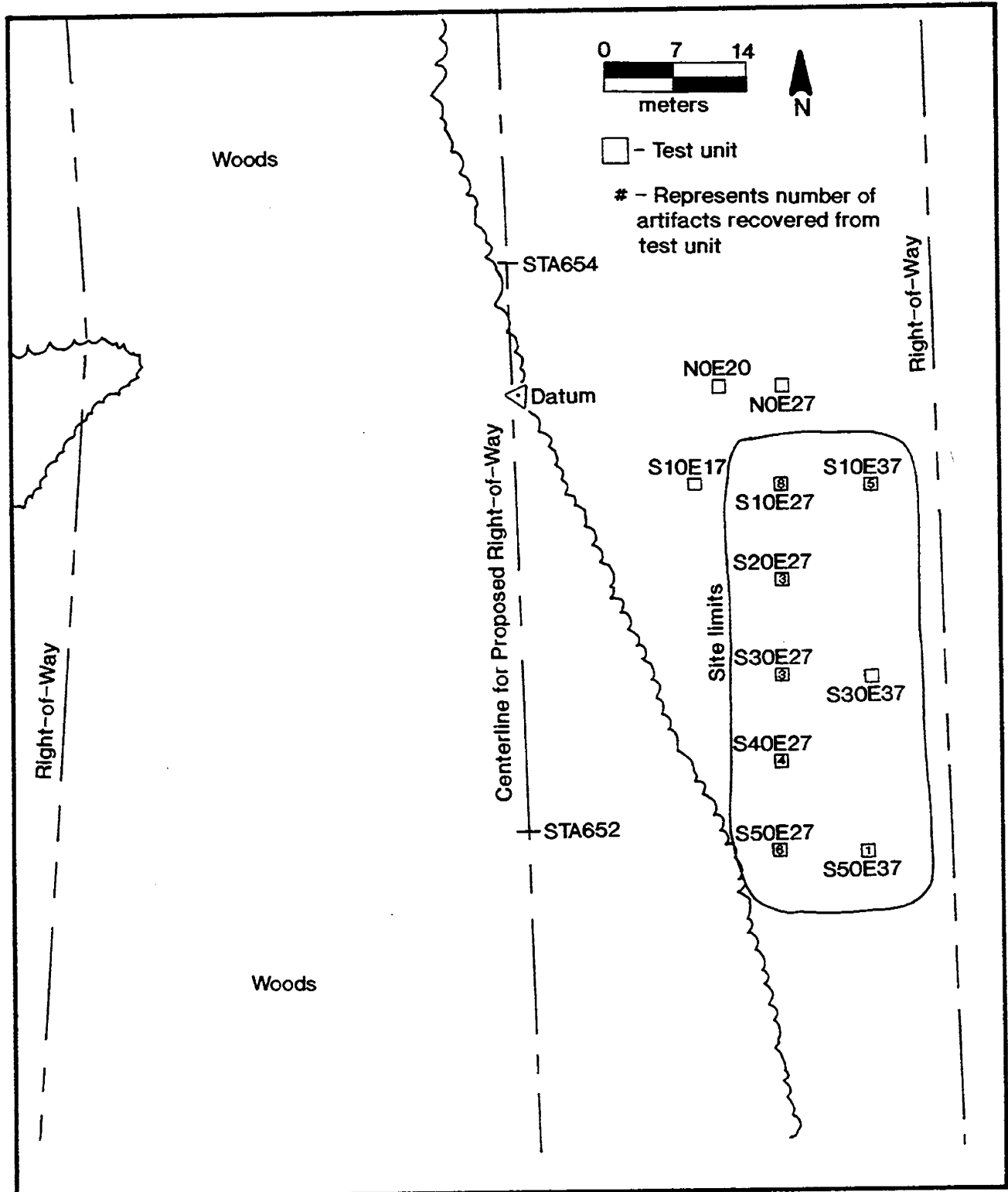


FIGURE 28

Site 7K-A-105 - Representative Soil Profile
from the North Wall of Test Unit NOW50

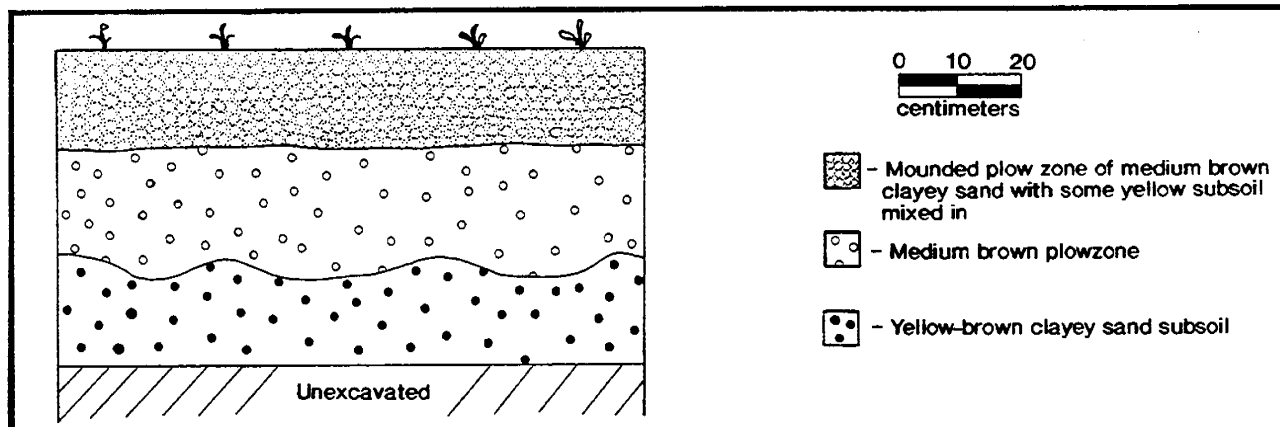


TABLE 4

SITE 7K-A-105 PREHISTORIC ARTIFACT SUMMARY

	Qtzte.	Qtz.	Chert	Jas.	Rhy.	Arg.	Chal.	Total
Flakes	3	2 (1)	13 (4)	27 (14)	1	2	8	56 (19)
Flake Tools	---	---	---	1	---	---	---	1
Shatter	---	2	---	---	---	---	---	2
Total	3	4 (1)	13 (4)	28 (14)	1	2	8	59 (19)

Total Count

Quartzite	3	5.10
Quartz	4 (1)	6.80
Chert	13 (4)	22.00
Jasper	28 (14)	47.50
Rhyolite	1	2.00
Argillite	2	3.00
Chalcedony	8	13.60
Total		100.00

KEY:

Qtzte. - Quartzite
Qtz. - Quartz
Jas. - Jasper
Rhy. - Rhyolite

Arg. - Argillite
Chal. - Chalcedony
() - Cortex

8 Fire-cracked Rock

FIGURE 29

Site 7K-A-105 - Plan View and South Wall Profile of Feature 2

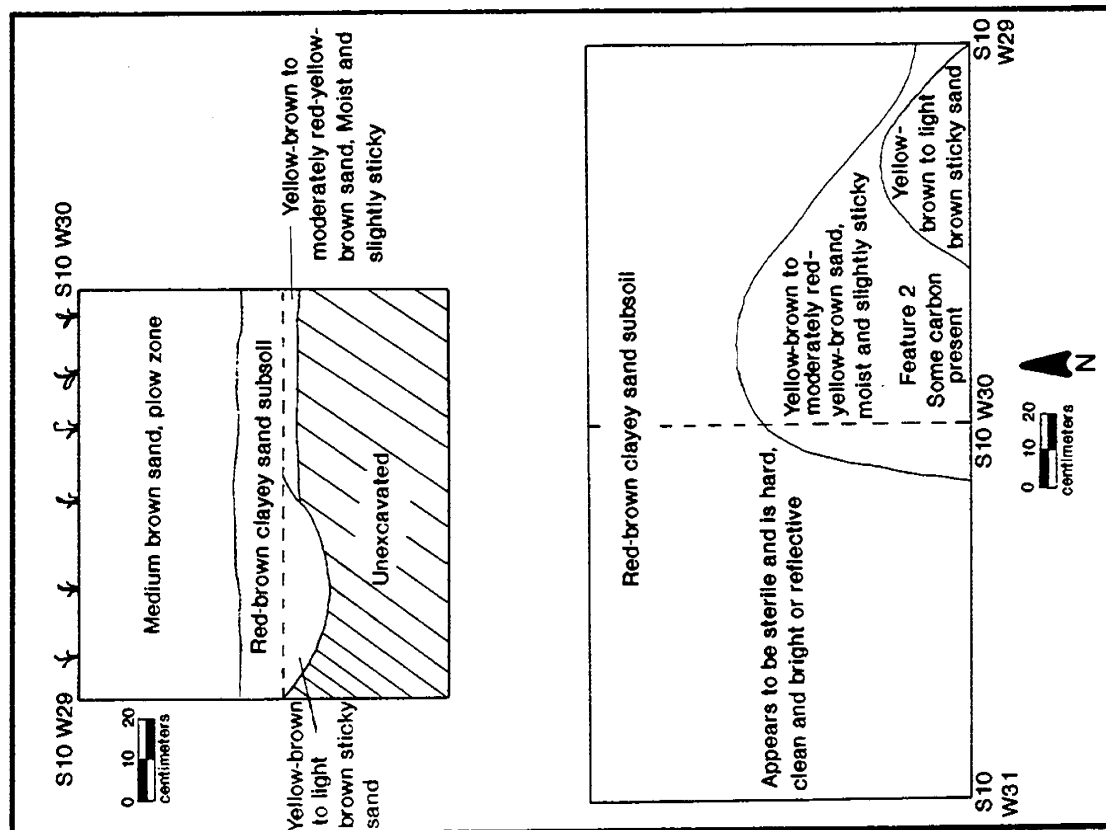


FIGURE 30

Site 7K-A-105 - North Wall Profile of Test Units N10W30 and N10W31, and Plan View of Features 4 and 5

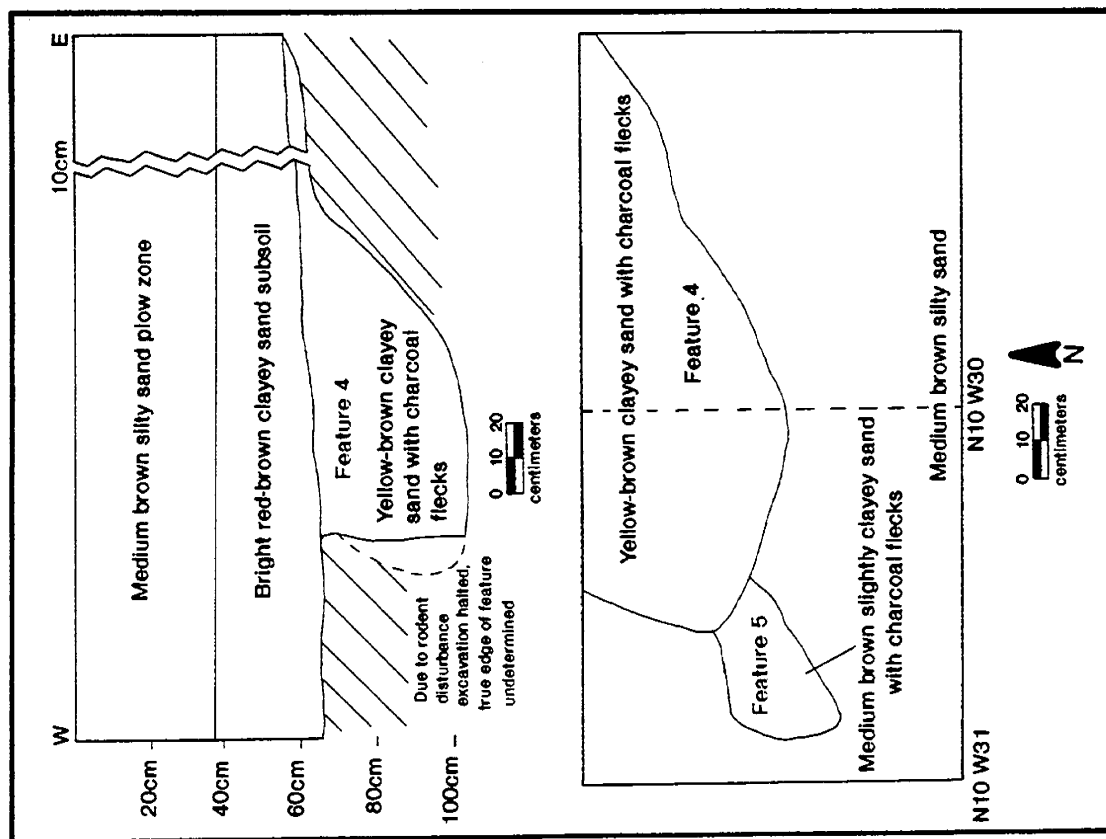
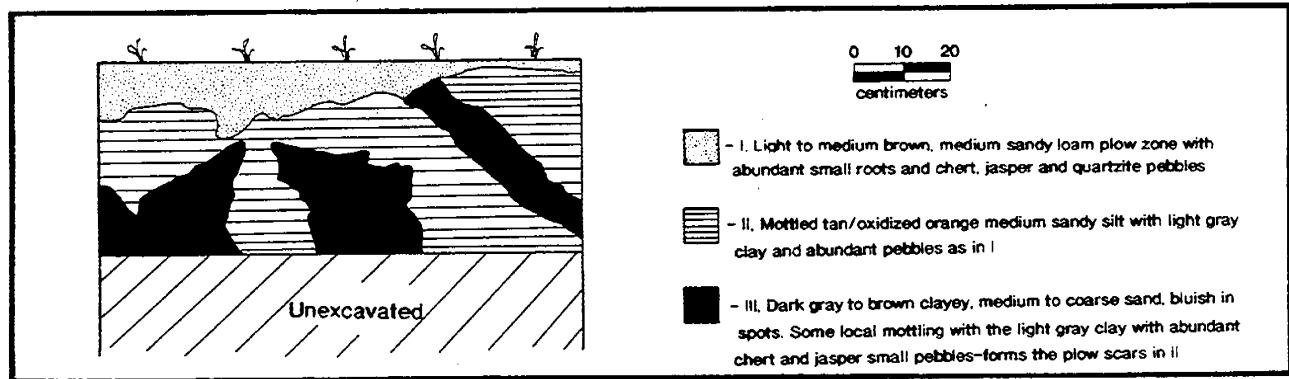


FIGURE 31

Site 7K-A-106 – Representative Soil Profile from the West Wall of Test Unit S15W10



Although 28 percent of the artifacts were recovered from subsoil contexts, the majority of cultural materials were recovered from the plow zone. Extensive chisel plowing undertaken by current agricultural tenants at the site has brought subsoil up into the plow zone, leaving the integrity of the subsoil in doubt. No features were located in intact subsurface deposits.

Approximately 60 meters north of 7K-A-105 is 7K-A-106 (Figure 22). Phase II testing of this site consisted of seven 1m x 1m test units (Figure 24). No prehistoric features were identified and only one diagnostic artifact, a jasper point type associated with the Woodland I Period, was recovered from the plow zone. Again, the majority of artifacts recovered consists of flakes, one-third of which exhibit cortex. Additional artifacts include one jasper flake tool, pieces of jasper and quartz shatter, and one fire-cracked rock. All artifacts were recovered from the plow zone (Figure 24). A typical profile of the site taken from Test Unit S15W10 (Figure 31) shows the highly disturbed plow zone and subsoil at the site. The presence of abundant pebbles throughout the strata, including the plow zone, demonstrates the vast extent of soil erosion at the site.

Approximately 82.5 meters north of 7K-A-106 and situated on a gradual slope to the east of Snow's Branch is 7K-A-107 (Figure 22). Phase II testing of this site consisted of eight 1m x 1m test units (Figure 25). No prehistoric features were identified. A typical soil profile drawn from the south wall of this unit shows a plow zone extending approximately 38 cm deep containing medium brown silty loam soils underlain by yellow to orange-brown sandy clay Pleistocene deposits (Figure 32). Plow scars and subsoil intrusions into the plow zone were observed in a few test units at the site, indicating plow disturbance and soil erosion.

A summary catalog of all prehistoric artifacts recovered in Phase II excavations is shown in Table 5. Diagnostic artifacts found at this site include two ceramic sherds dating to complexes of the Woodland II Period. The first is a Minguannan ceramic associated with the Minguannan Complex, and the second is a Townsend ceramic sherd associated with the Slaughter Creek Complex. Also found was a quartz stemmed point associated with the Woodland I Period. All diagnostic artifacts were recovered from the plow zone of the same test unit (N0W10). Other artifacts in the assemblage include flakes, one quartz flake tool, one quartz miscellaneous stone tool, quartz shatter, and fire-cracked rock. Flakes represent 90 percent of the assemblage, 29 percent of which exhibited cortex (Table 5). The overwhelming majority of all artifacts, including diagnostic artifacts, were recovered from the plow zone (Figure 25).

Approximately 127.5 meters north of 7K-A-107 on gently sloping terrain at the edge of a treeline is 7K-A-108 (Figure 22). Phase II testing of this site included eight 1m x 1m test units (Figure 26). No features or diagnostic artifacts were identified in this testing. Recovered artifacts include two quartz flakes, both showing

FIGURE 32

Site 7K-A-107 – Representative Soil Profile
from the South Wall of Test Unit NOW10

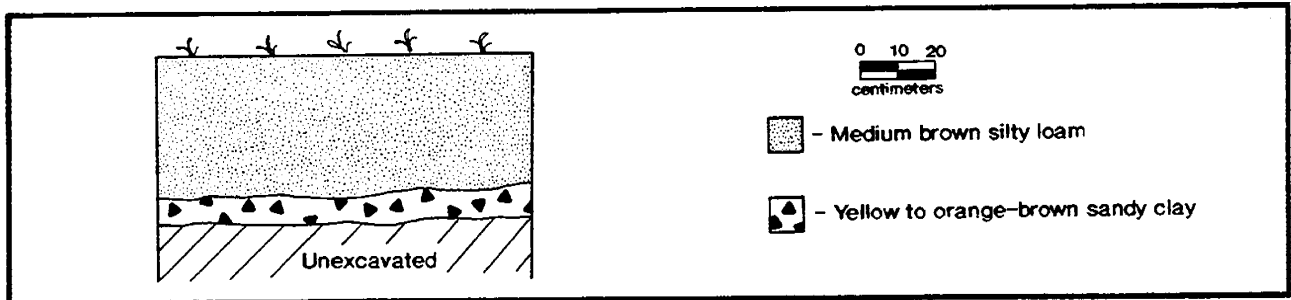


FIGURE 33

Site 7K-A-108 – Representative Soil Profile
from the South Wall of Test Unit N35E0

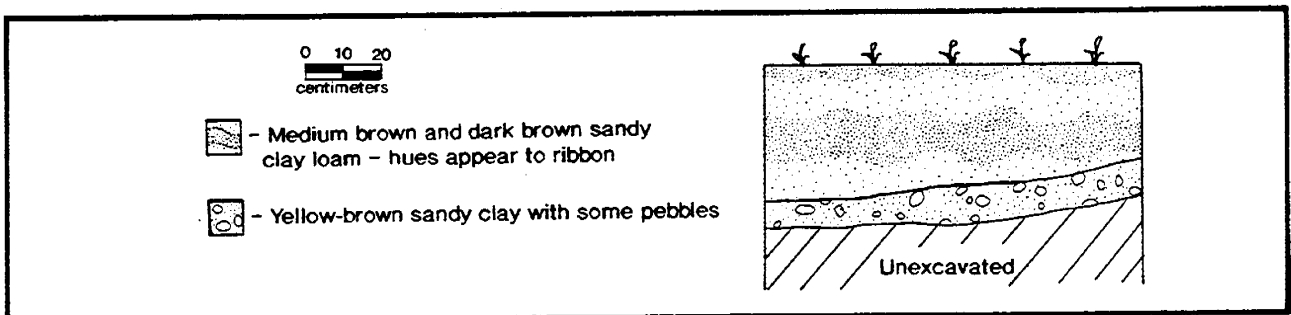


FIGURE 34

Site 7K-A-109 – Representative Soil Profile
from North Wall of Test Unit S10E27

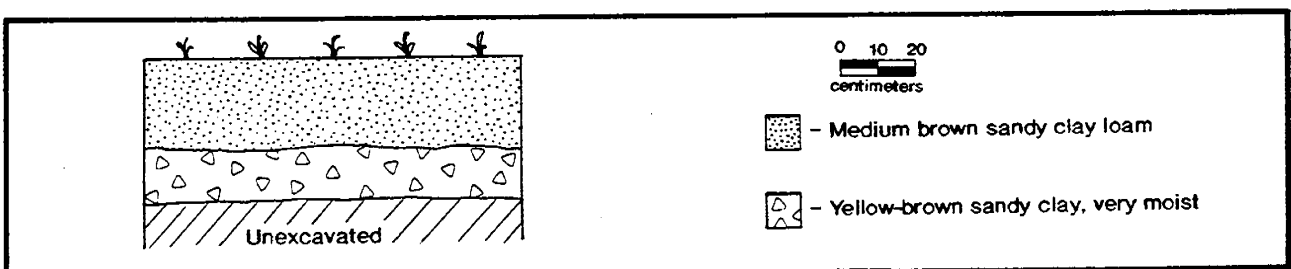


TABLE 5

SITE 7K-A-107 PREHISTORIC ARTIFACT SUMMARY

	Qtzte.	Qtz.	Chert	Jas.	Chal.	Total
Flakes	4 (1)	9	15 (2)	42 (19)	7	77 (22)
Flake Tools	---	1 (1)	---	---	---	1 (1)
Woodland I Points	---	1	---	---	---	1
Misc. Stone Tools	---	1	---	---	---	1
Shatter	---	2	---	---	---	2
Total	4 (1)	14 (1)	15 (2)	42 (19)	7	82 (23)

Total Count

%

Quartzite	4 (1)	4.90
Quartz	14 (1)	17.10
Chert	15 (2)	18.30
Jasper	42 (19)	51.20
Chalcedony	7	8.50
Total		100.00

KEY:

Qtzte. - Quartzite
 Qtz. - Quartz
 Jas. - Jasper
 Chal. - Chalcedony
 Misc. - Miscellaneous
 () - Cortex

2 Fire-cracked Rock
 1 Minguannan Ceramic
 1 Townsend Ceramic

cortex, one quartzite utilized flake, and one quartzite core, all from the plow zone (Figure 26). A soil profile taken from the south wall of Test Unit N35E0 shows the typical soil sequence at the site (Figure 33). The plow zone, which extends approximately 30 cm deep, contains medium-to-dark brown sandy clay loam soil. The plow zone is underlain by yellow-brown sandy clay soils with pebbles, probably Pleistocene deposits of the Columbia Formation (Jordan 1964). This unit as well as most of the other units at the site were greatly disturbed by deep plow scars extending as far as 10 cm into subsoil. Thus, consistent with other sites in the complex, 7K-A-108 appears to be both plow disturbed and eroded. Since no diagnostic artifacts or features were recovered from intact subsoil or even plow zone contexts, 7K-A-108 is not considered to be eligible for listing on the National Register of Historic Places. Thus, no further work is recommended.

Approximately 82.5 meters southeast of 7K-A-108 on a gradual slope east of a treeline and south of a bay/basin feature is 7K-A-109 (Figure 22). Phase II testing of this site consisted of 11 1m x 1m test units (Figure 27). A typical profile of the site taken from the north wall of Test Unit S10E27 shows a plow zone of medium and dark brown sandy clay loam extending down approximately 30 cm, underlain by a sterile yellow-brown moist sandy clay subsoil (Figure 34). Unlike other sites in the complex, 7K-A-109 shows little evidence of plow scars; however, all artifacts recovered from the site were confined to the plow zone. No prehistoric features or diagnostic

artifacts were identified. Eighty-three percent of the artifact assemblage is made up of flakes, 24 percent of which exhibit cortex. Other artifacts include one late stage biface reject, one core, one fire-cracked rock, and two pieces of shatter.

When all of the sites in the Snow's Branch Complex are considered together, it is clear that there is a relative abundance of flakes at the site, nearly one-third of which exhibit cortex. Therefore, it appears that local cobbles were an important supplementary source of materials for tool manufacture. The presence of cores and shatter as well as tools among the various flakes indicates that tool manufacture and resharpening were important activities at the site. The presence of ceramics and fire-cracked rocks along with the likelihood of prehistoric cultural features provides evidence of past habitation of the site, and diagnostic artifacts place that habitation in the Woodland Period. However, the absence of artifacts in deep levels of the subsoil and the generally low levels of artifacts produced by the sites suggest that habitation may well have been transient rather than long term. This pattern is consistent with one of the settlement models noted for the Slaughter Creek Complex (to which the Townsend ceramic from the assemblage dates) which equates seasonal camps with the micro-band base camps of earlier complexes (Custer 1986b:144). However, since these sites have been disturbed by chisel plowing and are largely confined to the plow zone and since there is an absence of definable features and significant quantities of artifacts, these sites are not considered to be eligible for listing on the National Register of Historic Places, and no further work is recommended.

Conclusions and Recommendations

In summary, all five sites in the Snow's Branch Complex are not considered to be eligible for listing on the National Register of Historic Places. No diagnostic artifacts were recovered from intact non-plow zone contexts and no cultural features were located in undisturbed contexts. Thus, no further work is recommended for sites 7K-A-105, 7K-A-106, 7K-A-107, 7K-A-108, and 7K-A-109.

MIDDLE LEIPSIC RIVER VALLEY ARCHAEOLOGICAL DISTRICT

7K-C-203, 7K-C-204, 7K-C-194, 7K-C-194A, and 7K-C-195 comprise the Middle Leipsic River Valley Archaeological District. The district is located along the Leipsic River between Smyrna and Dover in Kent County (Figure 2). The sites are situated on low rises surrounded by swampy areas of very poorly drained silty loam soils of the Johnston series (Matthews and Ireland 1971). The limits of the sites appear in Figure 35.

The study area consists of a 6-meter (20-foot) high bluff on the south side of the Leipsic River and a low 1.5 meter (4-foot) terrace on the north side. The fields on both banks, which are separated from the stream channel by thin lines of trees and shrubs, are currently used for no-till corn agriculture. A large section of the south bank contains an historically unplowed woodlot which lies just to the east of the 1988 proposed right-of-way and contains about 12 acres. Some sheet erosion is evident in the fields on the south side and the eroding B horizon can be observed in several places within sites 7K-C-203 and 7K-C-204. The river channel is now heavily constricted by siltation and weed growth, most of which has occurred within the past 50-60 years, according to local residents.

Phase II investigations of the Middle Leipsic River Valley sites were intensive. Therefore, the discussion of the sites will be presented in discrete sections pertaining to particular topics of investigation.

Previous Research

Prior to the 1985 survey conducted by the University of Delaware Center for Archaeological Research, five prehistoric archaeological sites were known from the Leipsic River drainage and all of these sites were known from surface collections (Figure 36). 7K-C-40 and 7K-C-94 are located on Dyke Branch about 5.0 kilometers (3.1 miles) southeast of the project area. The Bureau of Archaeology and Historic Preservation site files show that these macro-band base camps yielded Woodland I and Woodland II artifacts, including steatite bowl fragments, Wolfe Neck and Hell Island ceramics, Woodland I stemmed points, a Jack's Reef point, and Woodland II triangular points. 7K-C-6, located on Alston Branch just north of the town of Cheswold, contained triangular points and appears to be a Woodland II base camp. 7K-A-15 and 7K-A-16 lie on the north bank of the Leipsic River about